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IDENTIFIERS	DACUM Process; Ohio

ABSTRACT

Developed through a modified DACUM (Developing a Curriculum) process involving business, industry, labor, and community agency representatives in Ohio, this document is a comprehensive and verified employer competency profile for floriculture and greenhouse occupations. The list contains units (with and without subunits), competencies, and competency builders that identify the skills needed to enter these occupations. The occupational, academic, and employability skills for this occupation or occupational area are included. Within the outline are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests. Advancing items identify the knowledge, skills, and attitudes needed to advance in the occupation; futuring items identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation 3 to 4 years from now. Titles of the eight units are as follows: general safety precautions; equipment maintenance; marketing and sales; merchandise handling; business management; floral design; greenhouse plant production; and employability skills. (YLB)

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OCAP

OHIO'S COMPETENCY ANALYSIS PROFILE

FLORICULTURE AND GREENHOUSE WORKER

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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Division of Vocational and Career Education
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Vocational Instructional Materials Laboratory
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THE OHIO STATE UNIVERSITY

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What is OCAP?

"A comprehensive and verified employer competency list will be developed and kept current for each program." This is the second objective of Imperative 3 of the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*. Ohio's Competency Analysis Profile (OCAP) lists are the Division of Vocational and Career Education's response to that objective. OCAP lists evolve from a modified DACUM process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment.

How is OCAP used?

Each OCAP contains units (with and without subunits), competencies, and competency builders that identify the occupational, academic,* and employability skills needed to enter a given occupation or occupational area. Within that outline there are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items will be the basis for questions on the state vocational competency tests (scheduled to begin in school year 1993-94). Advancing items (marked with one asterisk) identify the knowledge, skills, and attitudes needed to advance in a given occupation. Futuring items (marked with two asterisks) identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation three to four years from now.

School districts may add as many units, subunits, competencies, and/or competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Using OCAP lists, instructors will be able to formulate their vocational courses of study and monitor competency gains via the new criterion-referenced competency testing program that will be directly tied to the competencies identified on the OCAP lists.

***Academic competencies have not been identified for all OCAPs. At a later date math, communication, and science competencies will be released.**

The **Employability Skills** portion of this list was verified by the following employer panel:

Gary J. Corrigan, *Dana Corporation*, Ottawa Lake, Michigan
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Ohio Competency Analysis Profile
Floriculture and Greenhouse Worker

Unit 1: General Safety Precautions

Competency 1.0.1: Maintain safe work environment

Competency Builders:

1.0.1.1 Read and follow safety information
1.0.1.2 Organize and maintain clean and safe work area
1.0.1.3 Identify hazardous materials and location of material safety data sheets (MSDSs)
1.0.1.4 Comply with greenhouse shop and equipment safety rules
1.0.1.5 Complete accident report
1.0.1.6 Recognize basic environmental issues pertaining to the industry, health administration, Environmental Protection Agency (EPA), Food and Drug Administration (FDA), and state and federal regulations
1.0.1.7 Identify and report safety hazards
1.0.1.8 Monitor company regulation updates
1.0.1.9 Comply with company regulations regarding controlled-substance use
1.0.1.10 Notify superior about incident
1.0.1.11 Correct nonchemical safety hazards
1.0.1.12 Supervise employees' compliance with company regulations regarding controlled-substance use*
1.0.1.13 Correct chemical safety hazards*
1.0.1.14 Use toxicity labels**

Competency 1.0.2: Demonstrate safe work habits

Competency Builders:

1.0.2.1 Read and follow label information
1.0.2.2 Wear protective clothing and equipment
1.0.2.3 Use safe lifting and carrying methods
1.0.2.4 Interpret information on signs
1.0.2.5 Check working condition of safety equipment and personal protective equipment
1.0.2.6 Report malfunctioning of safety equipment and personal protective equipment
1.0.2.7 Maintain and use slow-moving-vehicle signs when operating vehicles on road
1.0.2.8 Keep riders off mobile equipment
1.0.2.9 Recognize safety precautions for applying, storing, and handling chemicals and fertilizer
1.0.2.10 Recognize individual's role in safety
1.0.2.11 Observe safety precautions when applying chemicals and fertilizer*
1.0.2.12 Observe safety precautions when storing chemicals and fertilizer*
1.0.2.13 Follow personal cleanup procedures after handling chemicals and fertilizer*
1.0.2.14 Dispose of chemicals and chemical containers according to manual specifications and/or government regulations*

* Advancing
** Futuring

Competency 1.0.3: Operate and maintain equipment

Competency Builders:

1.0.3.1 Follow safety rules for equipment operation and maintenance
1.0.3.2 Observe and comply with safety zones around equipment
1.0.3.3 Operate equipment defensively
1.0.3.4 Interpret safety symbols
1.0.3.5 Maintain safety shields on all equipment
1.0.3.6 Shut down and lock out/tag out power equipment
1.0.3.7 Identify and report potential equipment safety hazards
1.0.3.8 Follow manufacturer's service recommendations
1.0.3.9 Correct equipment safety hazards*
1.0.3.10 Obtain commercial driver's license (CDL)**

Unit 2: Equipment Maintenance

Competency 2.0.1: Compare greenhouse structures

Competency Builders:

2.0.1.1 Follow general safety precautions
2.0.1.2 Identify life expectancy of structure
2.0.1.3 Identify space utilization
2.0.1.4 Identify types of ventilation systems
2.0.1.5 Identify types of structures
2.0.1.6 Use growth chambers**

Competency 2.0.2: Maintain greenhouse equipment and facilities

Competency Builders:

2.0.2.1 Follow general safety precautions
2.0.2.2 Clean and sanitize facility
2.0.2.3 Replace and repair plastic covering on greenhouse structure
2.0.2.4 Replace damaged sections of saran or black cloth
2.0.2.5 Replace damaged support wires for saran or black cloth
2.0.2.6 Clean heating and cooling systems
2.0.2.7 Construct and repair benches and frames
2.0.2.8 Replace windowpanes
2.0.2.9 Shade greenhouse glass
2.0.2.10 Adjust belts on equipment
2.0.2.11 Follow written assembly instructions
2.0.2.12 Clean and lubricate parts
2.0.2.13 Operate ventilation systems
2.0.2.14 Hang and repair doors*
2.0.2.15 Fumigate facility*
2.0.2.16 Inspect assembled equipment for operating defects*
2.0.2.17 Install plastic covering on greenhouse structure*
2.0.2.18 Utilize energy-efficient systems**

* Advancing
** Futuring

Competency 2.0.3: Maintain floral shop equipment and facilities

Competency Builders:

2.0.3.1 Follow general safety precautions
2.0.3.2 Clean and sanitize facilities
2.0.3.3 Clean refrigeration and air-conditioning components
2.0.3.4 Sharpen and lubricate cutting tools
2.0.3.5 Clean storage containers
2.0.3.6 Clean preservative system
2.0.3.7 Troubleshoot refrigeration problems
2.0.3.8 Use on-line entry systems**
2.0.3.9 Use computerized delivery system**

Competency 2.0.4: Perform prestart functions of delivery vehicles

Competency Builders:

2.0.4.1 Follow general safety precautions
2.0.4.2 Refuel vehicle
2.0.4.3 Check and add fluids
2.0.4.4 Check tires and tire pressure
2.0.4.5 Clean and sanitize inside and outside of vehicle
2.0.4.6 Check lights
2.0.4.7 Check mirrors
2.0.4.8 Maintain service schedule

Competency 2.0.5: Operate delivery vehicles

Competency Builders:

2.0.5.1 Follow general safety precautions
2.0.5.2 Interpret equipment gauges
2.0.5.3 Start, operate, and shut down engine
2.0.5.4 Use hand operating signals
2.0.5.5 Operate manual transmission
2.0.5.6 Operate automatic transmission
2.0.5.7 Use brake system
2.0.5.8 Remove and replace flat tires
2.0.5.9 Use jumper cables
2.0.5.10 Use computerized indicators**

Competency 2.0.6: Construct with concrete

Competency Builders:

2.0.6.1 Follow general safety precautions
2.0.6.2 Select concrete materials and additives
2.0.6.3 Select concrete tools
2.0.6.4 Calculate volume of concrete to order or mix
2.0.6.5 Excavate structure sites for concrete pouring
2.0.6.6 Install concrete reinforcement
2.0.6.7 Build and remove concrete forms
2.0.6.8 Mix and pour concrete
2.0.6.9 Finish concrete surface
2.0.6.10 Cure concrete

* Advancing
** Futuring

Competency 2.0.7: Construct with wood

Competency Builders:

2.0.7.1 Follow general safety precautions
2.0.7.2 Cut lumber to dimension
2.0.7.3 Install and repair bracing
2.0.7.4 Cut and fit joints
2.0.7.5 Select and use metal fasteners
2.0.7.6 Assemble joints with glue

Competency 2.0.8: Service water systems

Competency Builders:

2.0.8.1 Follow general safety precautions
2.0.8.2 Identify types of pipe, pipe fittings, insulation, and plumbing fixtures
2.0.8.3 Cut and fit pipe or tubing
2.0.8.4 Thread metal pipe
2.0.8.5 Install pipe and pipe fittings
2.0.8.6 Install and repair valves and faucets
2.0.8.7 Install insulation
2.0.8.8 Unclog pipes
2.0.8.9 Maintain automatic waterers
2.0.8.10 Install sprinkler heads and mist heads
2.0.8.11 Repair lines and nozzles on spray equipment
2.0.8.12 Repair broken pipes, sprinkler heads, mist heads, and valves
2.0.8.13 Troubleshoot problems
2.0.8.14 Recycle water**
2.0.8.15 Handle water restrictions**

Competency 2.0.9: Use and maintain hand and power tools

Competency Builders:

2.0.9.1 Follow general safety precautions
2.0.9.2 Identify tools
2.0.9.3 Select tools
2.0.9.4 Follow operation instructions
2.0.9.5 Recondition tools
2.0.9.6 Set up and adjust tools
2.0.9.7 Clean and lubricate tools
2.0.9.8 Store tools
2.0.9.9 Sharpen tools
2.0.9.10 Report damaged tools

Competency 2.0.10: Apply protective coatings

Competency Builders:

2.0.10.1 Follow general safety precautions
2.0.10.2 Sand surface
2.0.10.3 Apply masking tape
2.0.10.4 Thin paint
2.0.10.5 Mix and apply primer coat
2.0.10.6 Apply finish coat
2.0.10.7 Apply wood preservative
2.0.10.8 Identify types of coatings
2.0.10.9 Identify application methods
2.0.10.10 Clean equipment
2.0.10.11 Determine type of coating*

Unit 3: Marketing and Sales

Competency 3.0.1: Determine customer needs and services

Competency Builders:

3.0.1.1 Interpret customer's needs
3.0.1.2 Identify products available
3.0.1.3 Estimate quantity of needed product
3.0.1.4 Estimate total cost of needed product
3.0.1.5 Recommend products
3.0.1.6 Recommend alternate products
3.0.1.7 Use video marketing**
3.0.1.8 Use computer communication with customer**
3.0.1.9 Adopt cooperative marketing**

Competency 3.0.2: Provide technical assistance

Competency Builders:

3.0.2.1 Provide customer with informative materials
3.0.2.2 Interpret product labels
3.0.2.3 Provide basic care instructions
3.0.2.4 Demonstrate product use
3.0.2.5 Explain safety precautions regarding product use or application
3.0.2.6 Determine extent of product guarantee
3.0.2.7 Determine when merchandise is to be delivered
3.0.2.8 Address customer complaints
3.0.2.9 Provide specialized care instructions*
3.0.2.10 Utilize existing technologies for customer service**

* Advancing
** Futuring

Competency 3.0.3: Conduct sale

Competency Builders:

3.0.3.1 Greet customers
3.0.3.2 Use proper salesperson techniques
3.0.3.3 Use proper telephone techniques
3.0.3.4 Process tax-exempt sales transaction
3.0.3.5 Process debit card sales transaction
3.0.3.6 Process charge card sales transaction
3.0.3.7 Calculate customer discount
3.0.3.8 Complete sales tickets
3.0.3.9 Complete sales slip
3.0.3.10 Compute sales tax
3.0.3.11 Operate cash register
3.0.3.12 Count change
3.0.3.13 Process customer refund
3.0.3.14 Gift-wrap purchases
3.0.3.15 Follow up purchases and sales
3.0.3.16 Use tele-ordering**

Competency 3.0.4: Demonstrate presale skills

Competency Builders:

3.0.4.1 Maintain product and service knowledge
3.0.4.2 Differentiate product features and product benefits
3.0.4.3 Examine types of selling techniques
3.0.4.4 Identify types of customers
3.0.4.5 Recognize customer buying motives
3.0.4.6 Recognize customer buying signals
3.0.4.7 Maintain prospective customer relationship
3.0.4.8 Identify products and services to be presented
3.0.4.9 Plan presentation

Competency 3.0.5: Maintain company image

Competency Builders:

3.0.5.1 Explain importance of image
3.0.5.2 Identify factors affecting image

Competency 3.0.6: Price merchandise

Competency Builders:

3.0.6.1 Calculate markup
3.0.6.2 Identify psychological effects of pricing
3.0.6.3 Attach price tags
3.0.6.4 Prepare merchandise for inventory or display
3.0.6.5 Identify factors affecting prices
3.0.6.6 Estimate fixed and variable expenses*
3.0.6.7 Use Universal Product Code (UPC) and information base**

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Competency 3.0.7: Maintain customer relations

Competency Builders:

3.0.7.1 Identify factors affecting customer relations
3.0.7.2 Explain importance of customer relations
3.0.7.3 Identify customer expectations
3.0.7.4 Explain service levels offered
3.0.7.5 Recognize value of complaints and compliments

Competency 3.0.8: Display merchandise

Competency Builders:

3.0.8.1 Design displays
3.0.8.2 Set up displays
3.0.8.3 Select items
3.0.8.4 Use foam core and props
3.0.8.5 Identify display areas

Unit 4: Merchandise Handling

Competency 4.0.1: Receive merchandise

Competency Builders:

4.0.1.1 Follow general safety precautions
4.0.1.2 Unload merchandise
4.0.1.3 Check for shipping discrepancies
4.0.1.4 Report discrepancies and damages to superior
4.0.1.5 Inspect merchandise for damage
4.0.1.6 Unpack materials
4.0.1.7 Group products according to quality and variety
4.0.1.8 Use cooperative buying**

Competency 4.0.2: Prepare and load merchandise

Competency Builders:

4.0.2.1 Follow general safety precautions
4.0.2.2 Assemble shipping cartons
4.0.2.3 Package cuttings for shipment
4.0.2.4 Package, tag, and pack plants and flowers
4.0.2.5 Box and crate large plants
4.0.2.6 Attach shipping labels
4.0.2.7 Load merchandise
4.0.2.8 Secure load
4.0.2.9 Control quality
4.0.2.10 Prepare and attach delivery tag
4.0.2.11 Load merchandise automatically**

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Competency 4.0.3: Deliver merchandise

Competency Builders:

4.0.3.1 Follow general safety precautions
4.0.3.2 Arrange merchandise delivery
4.0.3.3 Determine delivery route
4.0.3.4 Unload merchandise
4.0.3.5 Maintain company image
4.0.3.6 Use automated mapping and routing**

Competency 4.0.4: Process cut flowers and greens

Competency Builders:

4.0.4.1 Follow general safety precautions
4.0.4.2 Identify temperature needs
4.0.4.3 Use proper cutting technique
4.0.4.4 Mix preservatives and treatments
4.0.4.5 Strip foliage
4.0.4.6 Separate flower varieties
4.0.4.7 Identify ethylene sources
4.0.4.8 Identify preservatives and treatments
4.0.4.9 Identify flower needs
4.0.4.10 Select preservatives and treatments*
4.0.4.11 Use specific preservative recommendations for varieties**
4.0.4.12 Utilize availability of materials**

Competency 4.0.5: Process container plants

Competency Builders:

4.0.5.1 Follow general safety precautions
4.0.5.2 Identify plant needs
4.0.5.3 Clean plants and containers
4.0.5.4 Trim plants
4.0.5.5 Decorate plants and containers
4.0.5.6 Attach care instructions
4.0.5.7 Attach price tags and Universal Product Codes (UPCs)
4.0.5.8 Utilize availability of plants**

Unit 5: Business Management

Competency 5.0.1: Perform general office duties

Competency Builders:

5.0.1.1 Follow general safety precautions
5.0.1.2 Use telephone
5.0.1.3 Duplicate materials
5.0.1.4 File materials
5.0.1.5 Type prepared correspondence
5.0.1.6 Prepare reports

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5.0.1.7 Operate calculator
5.0.1.8 Use two-way radio
5.0.1.9 Operate computer
5.0.1.10 Use FAX machine
5.0.1.11 Use electronic communications systems
5.0.1.12 Repair minor malfunctions of office equipment
5.0.1.13 Process mail*
5.0.1.14 Schedule appointments and meetings*
5.0.1.15 Plan work schedules*
5.0.1.16 Open and close store or department*
5.0.1.17 Balance cash drawer against register reading*

Competency 5.0.2: Keep customer accounts

Competency Builders:

5.0.2.1 Verify customer addresses
5.0.2.2 Post receipts
5.0.2.3 Post purchases
5.0.2.4 Post accounts payable
5.0.2.5 Set up customer file*
5.0.2.6 Balance customer accounts*
5.0.2.7 Prepare statements*
5.0.2.8 Prepare invoices*
5.0.2.9 Check customer credit reference information*
5.0.2.10 Use computerized coding**

Competency 5.0.3: Control inventory

Competency Builders:

5.0.3.1 Conduct physical inventory of merchandise, structures, and equipment
5.0.3.2 Identify high-activity and low-activity items
5.0.3.3 Maintain inventory records
5.0.3.4 Identify turnover rate factors
5.0.3.5 Report minimum inventory levels needed
5.0.3.6 Rotate stock
5.0.3.7 Maintain dump records
5.0.3.8 Use Universal Product Codes (UPCs) for inventory control**

Competency 5.0.4: Store merchandise

Competency Builders:

5.0.4.1 Follow general safety precautions
5.0.4.2 Update merchandise prices
5.0.4.3 Maintain quality-control records

* Advancing
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Competency 5.0.5: Order merchandise*

Competency Builders:

5.0.5.1 Assess merchandise seasonality*
5.0.5.2 Determine what to order*
5.0.5.3 Determine quantity to order*
5.0.5.4 Determine when to order*
5.0.5.5 Prepare daily, weekly, and monthly stock orders*
5.0.5.6 Make maximum use of vendor discounts*
5.0.5.7 Direct computer ordering**

Unit 6: Floral Design

Competency 6.0.1: Plan designs and arrangements

Competency Builders:

6.0.1.1 Construct boutonnieres
6.0.1.2 Construct corsages
6.0.1.3 Select flowers
6.0.1.4 Select foliage
6.0.1.5 Select containers
6.0.1.6 Establish lines for arrangement
6.0.1.7 Construct asymmetrical arrangements
6.0.1.8 Construct round arrangements
6.0.1.9 Construct oblong arrangements
6.0.1.10 Construct vertical arrangements
6.0.1.11 Construct horizontal arrangements
6.0.1.12 Construct triangular arrangements
6.0.1.13 Apply color principles
6.0.1.14 Select style for occasion
6.0.1.15 Identify design variations
6.0.1.16 Identify principles of design
6.0.1.17 Identify principles of efficient production of multiple pieces
6.0.1.18 Construct bud vases
6.0.1.19 Construct hand-held bouquets
6.0.1.20 Recognize techniques of using silk and dry materials
6.0.1.21 Arrange fruit baskets
6.0.1.22 Sell loose cut flowers**
6.0.1.23 Provide additional services**

Competency 6.0.2: Prepare materials for arrangements

Competency Builders:

6.0.2.1 Use holding devices
6.0.2.2 Identify flowers
6.0.2.3 Identify foliage
6.0.2.4 Use mechanical aides
6.0.2.5 Cut plants and materials to size
6.0.2.6 Wire and tape materials

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6.0.2.7 Select and prepare accessories for arrangements and occasions
6.0.2.8 Make bows
6.0.2.9 Prepare containers
6.0.2.10 Use tulle, ribbon, netting, and lace
6.0.2.11 Spray-tint dried and live floral products
6.0.2.12 Design and construct free-form bouquet*
6.0.2.13 Design and construct hand-tied bouquet*
6.0.2.14 Increase efficiency in nondesign areas**

Competency 6.0.3: Prepare wedding flowers*

Competency Builders:

6.0.3.1 Design and construct wedding fans and muffs*
6.0.3.2 Design and construct colonial/nosegay bouquets*
6.0.3.3 Design and construct arm-style bouquets*
6.0.3.4 Design and construct cascade bouquets*
6.0.3.5 Set up and dismantle wedding decorations*
6.0.3.6 Service wedding arrangements*
6.0.3.7 Design boutonnieres*
6.0.3.8 Design corsages*

Competency 6.0.4: Prepare live plant groupings

Competency Builders:

6.0.4.1 Follow general safety precautions
6.0.4.2 Select plant containers
6.0.4.3 Arrange plants
6.0.4.4 Fill containers with soil
6.0.4.5 Identify live plants
6.0.4.6 Select plants
6.0.4.7 Clean plants and containers
6.0.4.8 Use composting**
6.0.4.9 Recycle plastics**

Competency 6.0.5: Prepare sympathy flowers*

Competency Builders:

6.0.5.1 Design and construct casket spray*
6.0.5.2 Design and construct standing spray or wreaths*
6.0.5.3 Design and construct vases*
6.0.5.4 Identify set pieces*
6.0.5.5 Identify funeral home procedures*
6.0.5.6 Design and construct pillows*
6.0.5.7 Use new disposal techniques for flowers**

* Advancing
** Futuring

Unit 7: Greenhouse Plant Production

Competency 7.0.1: Test soil, water, and plant tissues

Competency Builders:

7.0.1.1 Follow general safety precautions
7.0.1.2 Take soil sample
7.0.1.3 Prepare soil to be tested
7.0.1.4 Collect plant tissues to be tested
7.0.1.5 Determine pH level
7.0.1.6 Determine soluble salt levels
7.0.1.7 Take water samples
7.0.1.8 Interpret results of water test*
7.0.1.9 Interpret results of soil test*
7.0.1.10 Interpret results of plant tissue test*
7.0.1.11 Use precise, reliable sensing equipment**

Competency 7.0.2: Prepare media mixes

Competency Builders:

7.0.2.1 Follow general safety precautions
7.0.2.2 Shred and mix planting media materials
7.0.2.3 Pasteurize media
7.0.2.4 Identify media functions
7.0.2.5 Identify media components
7.0.2.6 Purchase premixed media in bulk**
7.0.2.7 Use postharvest media blends**

Competency 7.0.3: Prepare for propagation

Competency Builders:

7.0.3.1 Follow general safety precautions
7.0.3.2 Identify plants, cuttings, and seedling stock
7.0.3.3 Grade cuttings for size
7.0.3.4 Interpret seed and bulb tag information
7.0.3.5 Identify containers
7.0.3.6 Identify environmental factors of propagation
7.0.3.7 Select media
7.0.3.8 Sanitize propagation equipment, areas, and containers
7.0.3.9 Determine plants, seeds, or cuttings per container*
7.0.3.10 Determine planting depth*
7.0.3.11 Determine plant scheduling*
7.0.3.12 Select seeds and bulbs*
7.0.3.13 Use increased automation**

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Competency 7.0.4: Plant and propagate plants

Competency Builders:

7.0.4.1 Follow general safety precautions
7.0.4.2 Sow seeds
7.0.4.3 Plant bulbs
7.0.4.4 Force bulbs
7.0.4.5 Take cuttings
7.0.4.6 Plant cuttings
7.0.4.7 Use rooting hormones
7.0.4.8 Plant plugs
7.0.4.9 Label plants and cuttings
7.0.4.10 Identify propagation problems*
7.0.4.11 Identify mechanical seeders and components*
7.0.4.12 Use tissue culture methods**

Competency 7.0.5: Handle and care for plants

Competency Builders:

7.0.5.1 Follow general safety precautions
7.0.5.2 Label plants or cuttings
7.0.5.3 Disbud plants
7.0.5.4 Transplant seedlings and plugs
7.0.5.5 Transplant cuttings
7.0.5.6 Transplant plants
7.0.5.7 Space plants
7.0.5.8 Adjust bedwire or fibered plastic
7.0.5.9 Pinch plants
7.0.5.10 Identify growth-regulating compounds
7.0.5.11 Tie plants to supports
7.0.5.12 Identify material-handling systems
7.0.5.13 Monitor plant growth (i.e., graphical tracking)*
7.0.5.14 Apply growth-regulating compounds*
7.0.5.15 Use automation**

Competency 7.0.6: Fertilize plants in greenhouse operation

Competency Builders:

7.0.6.1 Follow general safety precautions
7.0.6.2 Interpret fertilizer bag labels
7.0.6.3 Mix fertilizer solutions
7.0.6.4 Apply liquid fertilizer
7.0.6.5 Apply dry fertilizer
7.0.6.6 Use fertilizer injectors
7.0.6.7 Identify fertilization practices and terminology
7.0.6.8 Identify symptoms of nutrient deficiency*
7.0.6.9 Determine kind of fertilizer and lime to apply*
7.0.6.10 Interpret manufacturer's fertilization-rate charts*
7.0.6.11 Determine amount of fertilizer and lime to apply*
7.0.6.12 Calibrate fertilizer application equipment*
7.0.6.13 Increase fertilization efficiency**

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Competency 7.0.7: Regulate greenhouse environment

Competency Builders:

7.0.7.1 Follow general safety precautions
7.0.7.2 Install shade cloth
7.0.7.3 Apply glass shading compound
7.0.7.4 Identify supplemental lighting
7.0.7.5 Set timers to regulate lighting
7.0.7.6 Hang lath or saran cloth
7.0.7.7 Use light meters
7.0.7.8 Hand-irrigate plants
7.0.7.9 Adjust irrigation system
7.0.7.10 Adjust cooling system
7.0.7.11 Control humidity
7.0.7.12 Adjust temperatures for plants
7.0.7.13 Identify carbon dioxide levels
7.0.7.14 Identify factors influencing plant growth
7.0.7.15 Identify environmental control systems*
7.0.7.16 Recycle water**
7.0.7.17 Utilize water**

Competency 7.0.8: Plan pest-control program

Competency Builders:

7.0.8.1 Follow general safety precautions
7.0.8.2 Identify insects, diseases, and weeds
7.0.8.3 Recognize pest damage
7.0.8.4 Estimate pest population numbers
7.0.8.5 Identify chemical/cultural/biological control options
7.0.8.6 Interpret chemical labels and compatibility charts
7.0.8.7 Complete certification requirements for prescribed chemical application*
7.0.8.8 Assess degree of damage*
7.0.8.9 Use increased biological controls**

Competency 7.0.9: Harvest greenhouse plants

Competency Builders:

7.0.9.1 Follow general safety precautions
7.0.9.2 Identify harvest stages
7.0.9.3 Cut plants
7.0.9.4 Count and bunch plants
7.0.9.5 Regulate cold-storage unit temperature
7.0.9.6 Use automation**
7.0.9.7 Observe industry standards**
7.0.9.8 Use postharvest date coding**

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Competency 7.0.10: Apply chemical treatments*

Competency Builders:

7.0.10.1 Follow general safety precautions*
7.0.10.2 Calibrate application equipment*
7.0.10.3 Mix chemicals and load application equipment*
7.0.10.4 Use application equipment*
7.0.10.5 Follow proper cleaning and sterilization procedures*
7.0.10.6 Maintain application record*
7.0.10.7 Recognize chemical injury*
7.0.10.8 Use more nonchemicals**

Unit 8: Employability Skills
Subunit 8.1: Career Development

Competency 8.1.1: Investigate career options

Competency Builders:

8.1.1.1 Determine interests and aptitudes
8.1.1.2 Identify career options
8.1.1.3 Research occupations matching interests and aptitudes
8.1.1.4 Select career(s) that best match(es) interests and aptitudes
8.1.1.5 Identify advantages and disadvantages of career options, including nontraditional careers
8.1.1.6 Assess differences in wages, annual incomes, and job opportunities based on geographic location
8.1.1.7 Develop a career plan

Competency 8.1.2: Analyze potential barriers to employment

Competency Builders:

8.1.2.1 Identify common barriers to employment
8.1.2.2 Describe strategies to overcome employment barriers

Unit 8: Employability Skills
Subunit 8.2: Decision Making and Problem Solving

Competency 8.2.1: Apply decision-making techniques in the workplace

Competency Builders:

8.2.1.1 Identify the decision to be made
8.2.1.2 Compare alternatives
8.2.1.3 Determine consequences of each alternative
8.2.1.4 Make decisions based on values and goals
8.2.1.5 Evaluate the decision made

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Competency 8.2.2: Apply problem-solving techniques in the workplace

Competency Builders:

8.2.2.1 Diagnose the problem and its causes
8.2.2.2 Identify alternatives and their consequences in relation to the problem
8.2.2.3 Examine multicultural and nonsexist dimensions of problem solving
8.2.2.4 Utilize resources to explore possible solutions to the problem
8.2.2.5 Compare and contrast the advantages and disadvantages of each solution
8.2.2.6 Determine appropriate action
8.2.2.7 Evaluate results

Unit 8: Employability Skills

Subunit 8.3: Work Ethic

Competency 8.3.1: Evaluate the relationship of self-esteem to work ethic

Competency Builders:

8.3.1.1 Identify special characteristics and abilities in self and others
8.3.1.2 Identify internal and external factors that affect self-esteem

Competency 8.3.2: Analyze the relationship of personal values and goals to work ethic both in and out of the workplace

Competency Builders:

8.3.2.1 Distinguish between values and goals
8.3.2.2 Determine the importance of values and goals
8.3.2.3 Evaluate how values affect goals
8.3.2.4 Identify short-term and long-term goals
8.3.2.5 Prioritize personal goals
8.3.2.6 Describe how personal values are reflected in work ethic
8.3.2.7 Describe how interactions in the workplace affect personal work ethic
8.3.2.8 Examine how life changes affect personal work ethic

Competency 8.3.3: Demonstrate work ethic

Competency Builders:

8.3.3.1 Examine factors that influence work ethic
8.3.3.2 Exhibit characteristics that reflect an appropriate work ethic

Unit 8: Employability Skills
Subunit 8.4: Job-Seeking Skills

Competency 8.4.1: Prepare for employment

Competency Builders:

8.4.1.1 Identify traditional and nontraditional employment sources
8.4.1.2 Utilize employment sources
8.4.1.3 Research job opportunities, including nontraditional careers
8.4.1.4 Interpret equal employment opportunity laws
8.4.1.5 Explain the critical importance of personal appearance, hygiene, and demeanor throughout the employment process
8.4.1.6 Prepare for generic employment tests and those specific to an occupation/organization

Competency 8.4.2: Design a résumé

Competency Builders:

8.4.2.1 Identify personal strengths and weaknesses
8.4.2.2 List skills and/or abilities, career objective(s), accomplishments/achievements, educational background, and work experience
8.4.2.3 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
8.4.2.4 Complete résumé using various formats
8.4.2.5 Secure references

Competency 8.4.3: Complete and process job application forms

Competency Builders:

8.4.3.1 Explain the importance of an application form
8.4.3.2 Identify ways to obtain job application forms
8.4.3.3 Describe methods for handling illegal questions on job application forms
8.4.3.4 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
8.4.3.5 Return application to proper person, request interview, and follow up

Competency 8.4.4: Demonstrate interviewing skills

Competency Builders:

8.4.4.1 Investigate interview environment and procedures
8.4.4.2 Explain the critical importance of personal appearance, hygiene, and demeanor
8.4.4.3 Demonstrate question and answer techniques
8.4.4.4 Demonstrate methods for handling difficult and/or illegal interview questions

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Competency 8.4.5: Secure employment

Competency Builders:

8.4.5.1 Identify present and future employment opportunities within an occupation/organization
8.4.5.2 Research the organization/company
8.4.5.3 Use follow-up techniques to enhance employment potential
8.4.5.4 Compare and evaluate job offers

Unit 8: Employability Skills
Subunit 8.5: Job Retention Skills

Competency 8.5.1: Analyze the organizational structure of the workplace

Competency Builders:

8.5.1.1 Identify and evaluate employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
8.5.1.2 Be aware of and obey all company policies and procedures
8.5.1.3 Examine the role/relationship between employee and employer
8.5.1.4 Recognize opportunities for advancement and reasons for termination

Competency 8.5.2: Maintain positive relations with others

Competency Builders:

8.5.2.1 Exhibit appropriate work habits and attitude
8.5.2.2 Identify behaviors to establish successful working relationships
8.5.2.3 Cooperate and compromise through teamwork and group participation
8.5.2.4 Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

Unit 8: Employability Skills
Subunit 8.6: Job Advancement

Competency 8.6.1: Analyze opportunities for personal and career growth

Competency Builders:

8.6.1.1 Determine opportunities within an occupation/organization
8.6.1.2 Compare and contrast other opportunities
8.6.1.3 List benefits of job advancement
8.6.1.4 Evaluate factors involved when assuming a new position within or outside an occupation/organization

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Competency 8.6.2: Exhibit characteristics needed for advancement

Competency Builders:

8.6.2.1 Display a positive attitude
8.6.2.2 Demonstrate knowledge of a position
8.6.2.3 Perform quality work
8.6.2.4 Adapt to changing situations and technology
8.6.2.5 Demonstrate capability for different positions
8.6.2.6 Participate in continuing education/training programs
8.6.2.7 Respect, accept, and work with ALL individuals in the workplace

Unit 8: Employability Skills
Subunit 8.7: Technology in the Workplace

Competency 8.7.1: Assess the impact of technology in the workplace

Competency Builders:

8.7.1.1 Cite how past business/industry practices have influenced present business/industry processes
8.7.1.2 Investigate the use of technology in the workplace
8.7.1.3 Analyze how present skills can be applied to learning new technologies

Competency 8.7.2: Use a variety of technological applications

Competency Builders:

8.7.2.1 Explore basic mathematical, scientific, computer, and technological principles
8.7.2.2 Use technology to accomplish assigned tasks
8.7.2.3 Create solutions to problems using technical means

Unit 8: Employability Skills
Subunit 8.8: Lifelong Learning

Competency 8.8.1: Apply lifelong learning to individual situations

Competency Builders:

8.8.1.1 Define lifelong learning
8.8.1.2 Identify factors that cause the need for lifelong learning

Competency 8.8.2: Adapt to change

Competency Builders:

8.8.2.1 Analyze the effects of change
8.8.2.2 Identify reasons why goals change
8.8.2.3 Describe the importance of flexibility when reevaluating goals
8.8.2.4 Evaluate the need for continuing education/training

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Unit 8: Employability Skills
Subunit 8.9: Economic Education

Competency 8.9.1: Analyze global enterprise system

Competency Builders:

8.9.1.1 Identify characteristics of various enterprise systems
8.9.1.2 Examine the relationship between competition, risk, and profit
8.9.1.3 Illustrate how supply and demand influence price

Competency 8.9.2: Evaluate personal money management

Competency Builders:

8.9.2.1 Describe the need for personal management records
8.9.2.2 Identify methods of taxation
8.9.2.3 Analyze how credit affects financial security
8.9.2.4 Compare types and methods of investments
8.9.2.5 Prepare a personal budget
8.9.2.6 Be an informed and responsible consumer
8.9.2.7 Analyze the effects of advertising on the consumer

Unit 8: Employability Skills
Subunit 8.10: Balancing Work and Family

Competency 8.10.1: Analyze the effects of family on work

Competency Builders:

8.10.1.1 Recognize how family values, goals, and priorities are reflected in the workplace
8.10.1.2 Identify present and future family structures and responsibilities
8.10.1.3 Describe personal and family roles
8.10.1.4 Analyze concerns of working parent(s)
8.10.1.5 Examine how family responsibilities can conflict with work
8.10.1.6 Resolve family-related conflicts
8.10.1.7 Explain how to use support systems/community resources to help resolve family-related conflicts

Competency 8.10.2: Analyze the effects of work on family

Competency Builders:

8.10.2.1 Identify responsibilities associated with paid and nonpaid work
8.10.2.2 Compare the advantages and disadvantages of multiple incomes
8.10.2.3 Explain how work can conflict with family responsibilities
8.10.2.4 Explain how work-related stress can affect families
8.10.2.5 Identify family support systems and resources

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Unit 8: Employability Skills
Subunit 8.11: Citizenship in the Workplace

Competency 8.11.1: Exercise the rights and responsibilities of citizenship in the workplace

Competency Builders:

8.11.1.1 Identify the basic rights and responsibilities of citizenship
8.11.1.2 Examine the history and contributions of all racial, ethnic, and cultural groups

Competency 8.11.2: Cooperate with others in the workplace

Competency Builders:

8.11.2.1 Identify situations in which compromise is necessary
8.11.2.2 Examine how individuals from various backgrounds contribute to work-related situations
8.11.2.3 Demonstrate initiative to facilitate cooperation
8.11.2.4 Give and receive constructive criticism to enhance cooperation

Unit 8: Employability Skills
Subunit 8.12: Leadership

Competency 8.12.1: Evaluate leadership styles appropriate for the workplace

Competency Builders:

8.12.1.1 Identify characteristics of effective leaders
8.12.1.2 Compare leadership styles
8.12.1.3 Demonstrate effective delegation skills
8.12.1.4 Identify opportunities to lead in the workplace

Competency 8.12.2: Demonstrate effective teamwork skills

Competency Builders:

8.12.2.1 Identify the responsibilities of a valuable group member
8.12.2.2 Exhibit open-mindedness
8.12.2.3 Identify methods of involving each member of a team
8.12.2.4 Contribute to the efficiency and success of a group
8.12.2.5 Determine ways to motivate others

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Competency 8.12.3: Utilize effective communication skills

Competency Builders:

8.12.3.1 Identify the importance of listening
8.12.3.2 Demonstrate assertive communication
8.12.3.3 Recognize the importance of verbal and nonverbal cues and messages
8.12.3.4 Analyze written material
8.12.3.5 Prepare written material
8.12.3.6 Give and receive feedback
8.12.3.7 Articulate thoughts
8.12.3.8 Use appropriate language

Unit 8: Employability Skills

Subunit 8.13: Entrepreneurship

Competency 8.13.1: Evaluate the role of small business in the economy

Competency Builders:

8.13.1.1 Identify the benefits of small business to a community
8.13.1.2 Analyze opportunities for small business in a community

Competency 8.13.2: Examine considerations of starting a business

Competency Builders:

8.13.2.1 Research a business idea
8.13.2.2 Compare various ways to become a small business owner
8.13.2.3 Investigate factors to consider in financing a new business
8.13.2.4 Evaluate entrepreneurship as a career option

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